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Application No.: 10/804,244

Docket No.: TAW-008RCE

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A shape memory alloy comprising Co, Ni and Al, wherein said shape memory alloy has a two-phase structure comprising a β -phase having a B2 structure and a γ -phase having an fcc structure, at least 40% by area of crystal grain boundaries of said β -phase being occupied by said γ -phase, wherein said alloy contains 23 to 27 atomic % of Al and 39 to 45 atomic % of Co, the balance being 28 to 38 atomic % of Ni and inevitable impurities.
2. (Original) The shape memory alloy according to claim 1, wherein 45 to 80% by area of said crystal grain boundaries of said β -phase are occupied by said γ -phase.
3. (Original) The shape memory alloy according to claim 1, wherein the fraction of said γ -phase volume in said shape memory alloy is 5 to 50% by volume.
4. (Original) The shape memory alloy according to claim 2, wherein the fraction of said γ -phase volume in said shape memory alloy is 5 to 50% by volume.
- 5.—7. (Canceled)
8. (Withdrawn) A method for producing a shape memory alloy comprising Co, Ni and Al with a two-phase structure comprising a β -phase having a B2 structure and a γ -phase having an fcc structure; at least 40% by area of crystal grain boundaries of said β -phase being occupied by said γ -phase; said method comprising a first heat treatment step comprising heating at 1200 to 1350°C. for 0.1 to 50 hours and cooling at 0.1 to 1000°C/minute, and a second heat treatment step comprising heating at 1000 to 1320°C for 0.1 to 50 hours and cooling at 10 to 10000°C/minute.
9. (New) The shape memory alloy according to claim 1, wherein said at least 40% by area of crystal grain boundaries comprises a one-stage heat treatment of said shape memory alloy comprising a heat treatment step comprising heating at 1000 to 1350°C for 0.5 to 50 hours and cooling at 10 to 10000°C/minute.

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10. (New) The shape memory alloy according to claim 1, wherein said at least 40% by area of crystal grain boundaries comprises a two-stage heat treatment of said shape memory alloy comprising a first heat treatment step comprising heating at 1200 to 1350°C for 0.1 to 50 hours and cooling at 0.1 to 1000°C/minute, and a second heat treatment step comprising heating at 1000 to 1320°C for 0.1 to 50 hours and cooling at 10 to 10000°C/minute.

11. (New) The shape memory alloy according to claim 10, wherein said first heat treatment step comprises at 1350°C for 0.5 hours.